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EXAMINER

BUTLER, DENNIS

ART UNIT

PAPER NUMBER

2115

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/827,026

Applicant(s)

ELLIS ET AL.

Examiner

Dennis M. Butler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-15 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. This action is in response to the amendment received on July 14, 2004. Claims 1-15 are pending.
2. Claims 1-4, 8 and 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Williams, U. S. Patent 6,714,021.

Per claims 1 and 11-12:

A) Williams teaches the following claimed items:

1. a first timer performing coarse timing measurement of an electronic circuit with Coarse Timebase 1226 of figures 15 and 18 and at column 8, lines 12-29;
2. a second timer performing fine timing measurement of the electronic circuit with Fine Timebase 1227 of figures 15 and 18 and at column 8, lines 39-54;
3. storage means for storing timing measurements of the first and second timers with the timing analyzer software, with the (Cn,Fn) timebase values of figure 19, at column 11, lines 5-18 and at column 11, line 53 – column 12, line 18.

Per claim 2:

Williams describes the timing analyzer as a component of a BIST system on an IC at column 8, lines 55-61 and at column 12, line 62 – column 13, line 21.

Per claim 3:

Williams describes separately controlled delay elements with delay elements 1201 through 1215 and 1231 through 1294 of figure 15 and at column 8, lines 12-29 and 39-54.

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Per claims 4 and 13:

Williams describes delay elements controlled by individual control words with the Coarse and Fine Timebase Select words 1219 and 1298 of figure 15 and at column 8, lines 16-23 and 40-41:

Per claim 8:

A) Williams teaches the following claimed items:

1. a first timer performing coarse timing measurement of an electronic circuit with Coarse Timebase 1226 of figures 15 and 18 and at column 8, lines 12-29;
 2. a second timer performing fine timing measurement of the electronic circuit with Fine Timebase 1227 of figures 15 and 18 and at column 8, lines 39-54;
 3. storage means for storing timing measurements of the first and second timers with the timing analyzer software, with the (Cn,Fn) timebase values of figure 19, at column 11, lines 5-18 and at column 11, line 53 – column 12, line 18;
 4. a BIST system on an IC at column 8, lines 55-61 and at column 12, line 62 – column 13, line 21.
3. Claims 5-7 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams, U. S. Patent 6,714,021.

Per claims 5-7 and 14-15:

Williams fails to explicitly teach using binary counters to generate the individual control words as claimed. However, Williams describes generating individual

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control words (Coarse and Fine Timebase Select words 1219 and 1298 of figure 15) and describes incrementing the individual control words to increment the amount of delay with elements 1409 and 1414 of figure 18. Therefore, Williams discloses the claimed invention except for explicitly reciting using binary counters to generate/increment the control words. However, binary counters are well known and it would have been obvious to one having ordinary skill in the art at the time the invention was made to use incrementing binary counters in order to increment the binary values of the control words of the coarse and fine timers in order to increment the amount of delay and increment the number of delay elements that actively delay the signal output from the fine or the coarse delay timers.

4. Claims 1 and 11-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Dilger et al., U. S. Patent 6,161,420.

Per claims 1 and 11-12:

A) Dilger et al teach the following claimed items :

1. a first timer performing coarse timing measurement of an electronic circuit with Counter 104 and Subtract Circuit 116 of figure 2, at column 5, lines 19-21 and 45-54 and at column 8, lines 33-55;
2. a second timer performing fine timing measurement of the electronic circuit with Timer 134 of figure 2, at column 6, lines 32-57 and at column 10, lines 23-36;

3. storage means for storing timing measurements of the first and second timers with the storage means in embedded controller 202 that store coarse measurement 118 and fine measurement 136, at column 7, lines 31-46 and at column 10, lines 37-42.
5. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The declaration filed on July 14, 2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the Williams reference.

The declaration under 37 CFR 1.131 must be made by all of the inventors of the subject matter claimed. See MPEP 715.04.

7. Applicant's arguments filed on July 14, 2004 have been fully considered but they are not persuasive.

In the Remarks, applicant has argued in substance that: the applied references described significantly different subject matter from the subject invention

A. The applied references described significantly different subject matter from the subject invention because the subject invention uses coarse and fine timing adjustments to test an integrated circuit and determines precise measurements of the characteristics of the IC.

B. The examiner is equating delay elements of Williams with the control word of the subject invention.

C. Dilger measures frequency while the subject invention does not measure any frequencies.

D. Dilger cannot be adapted to measure the timing margin of an integrated circuit.

8. As to point A, independent claims 1 and 11 recite testing electronic circuits, not integrated circuits. In addition, there is no mention of precise measurements in these claims. The examiner is not required to reject applicant's detailed specification. The applied references teach the invention to the extent claimed. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., integrated circuits and precise measurements) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As to point B, the examiner did not equate the delay elements of Williams with the control word of the subject invention as stated by applicant. The rejection on record in applicant's file clearly indicates that the examiner equated coarse and fine timebase select words 1219 and 1298 with the control words. See paragraph 6 of the previous office action.

As to points C and D, independent claims 1, 8 and 11 recite performing timing measurements. The claims do not recite the performance of any specific type of timing measurements such as the timing margin of an integrated circuit and they do not exclude the performance of any specific type of timing measurements such as

frequency measurements. Dilger clearly teaches that it is known use coarse and fine timers are for measuring and recording frequency values. Dilger teaches the invention recited in claims 1, 11 and 12 to the extent claimed. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., specific types of timing measurements such as the timing margin of an integrated circuit) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

9. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis M. Butler whose telephone number is 703-305-

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9663. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Dennis M. Butler

Dennis M. Butler
Primary Examiner
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